

**CLAIMS**

1. A piconet, comprising:

5 first and second communication devices,

the first communication device communicating with the second communication device using a Bluetooth mode of transmission and a second mode of transmission.

10 2 A piconet as defined in claim 1, wherein the second mode of transmission is a higher speed mode than the Bluetooth mode.

3 A piconet as defined in claim 1, wherein the first communication device maintains synchronization between the Bluetooth mode and the second mode at the physical layer.

15 4 A piconet as defined in claim 1, wherein the first communication device is a master unit.

5 A scatternet, comprising:

a first piconet having a first communication device operating therein;

a second piconet having a second communication device operating therein;

5 and a third communication device communicating to the first communication device using a Bluetooth mode, and communicating to the second communication device using a second mode of transmission.

10 6. A scatternet as defined in claim 5, wherein the third communication device comprises a slave unit.

7. A scatternet as defined in claim 6, wherein the first and second communication devices comprises master units.

15 8. A scatternet as defined in claim 5, wherein the third communication device comprises a device which acts as a master unit when communicating with the first communication device and acts as a slave unit when communicating with the second communication device.

9. A scatternet as defined in claim 5, wherein synchronization between the Bluetooth mode and the second mode is maintained in the third communication device at the physical layer of the Bluetooth mode and the second mode.

TI-31597

10. A method for communicating between a first communication device and a plurality of other communication devices using multiple modes including a Bluetooth mode of operation, comprising the steps of:

5

(a) placing the first communication in the Bluetooth mode in order to communicate with a communication device from amongst the plurality of communication devices; and

10

(b) placing the first communication device in a second mode in order to communicate with a communication device from amongst the plurality of communication devices.

11. A method as defined in claim 10, wherein the first communication device in step (b) uses a "within mode synchronous" technique while in the second mode whereby the packets used to communicate with the communication device from amongst the plurality are only synchronous while the first communication device is in the second mode.

15

12. A method as defined in claim 10, wherein the first communication device uses packets to communicate with the communication devices in step (a) and (b) which are "across mode synchronous".

20

13. A method as defined in claim 10, wherein the communication device that the first communication device communicates with in step (a) and (b) is the same communication device from amongst the plurality of communication devices.

TI-31597  
 12  
 13. A method as defined in claim 10, wherein the communication device that the first communication device communicates with in step (a) and (b) is the same communication device from amongst the plurality of communication devices.